

GRETINA completion and the first engineering run

On March 22nd 2011, the Department of Energy approved the start of operations for GRETINA (Critical Decision 4 CD-4). The project has been completed on time, on budget, and exceeded many of the key performance parameters. GRETINA started sixteen years ago with the first meeting to discuss the concept and physics opportunities of a tracking array. The Mission Need was approved (CD-0) nine years ago. GRETINA now enters the operations phase with scheduled engineering runs taking place in April, May, and July in Cave 4C of the 88-Inch Cyclotron. It will then be moved and coupled with the BGS for a series of commissioning runs from September to December 2011. Shortly thereafter it will move to the NSCL at MSU to begin physics campaigns at the national laboratories, as agreed upon at the Richmond meeting in October 2007.

The first engineering run was carried out successfully April 5-6. The main goals were to test, debug, and optimize GRETINA under high gamma-ray multiplicity conditions. Of particular importance was to learn how the trigger system handles such events, how stable the systems are as a function of rate, and how the signal decomposition and tracking perform under such “battle” conditions. The reaction used was $^{122}\text{Sn}(^{40}\text{Ar}, 4n)^{158}\text{Er}$ with a 170 MeV Ar beam from the 88-Inch cyclotron. We completed all the planned tests and collected about 1 Tbyte of data. Results from an on-line analysis are shown in Figure 1.

Members of the Users Community representing ANL, FSU, ORNL, Richmond and Rochester participated of this run.

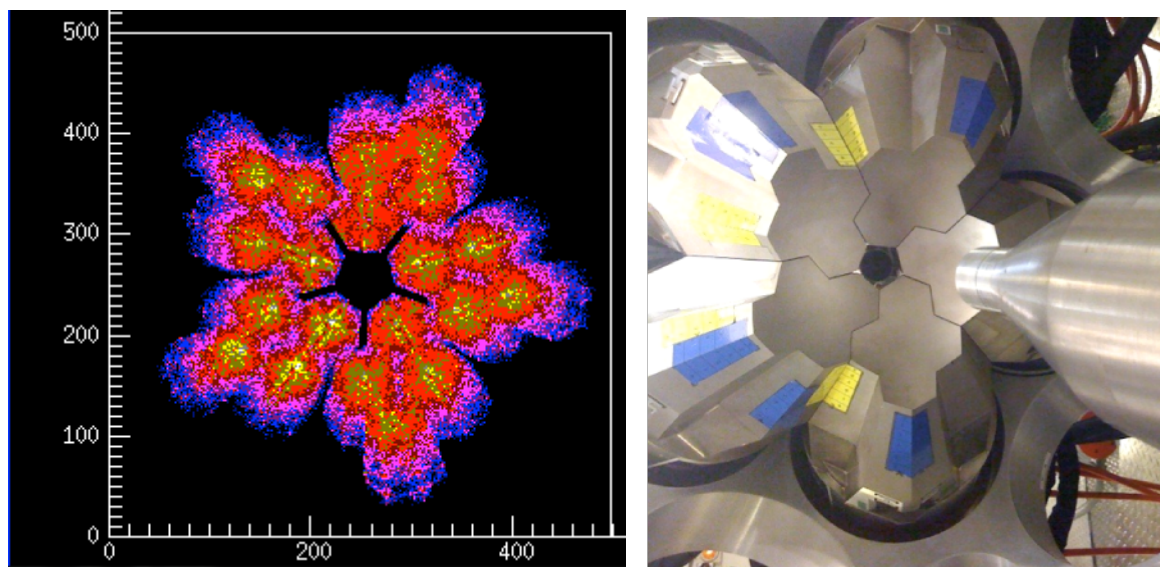


Figure 1. Left panel shows the interaction points determined from the on-line signal decomposition algorithm. Right panel show the actual detector modules.